

injurious insects, and that to prevent such introduction horticultural quarantine officers should be stationed at various Southern ports, and that in addition an agent of the Department of Agriculture should be sent to study the injurious insects in Mexico, Central America and the West Indies.

PROF. S. W. Holman, of the Massachusetts Institute of Technology contributes to the December number of *The Philosophical Magazine* an article on galvanometer design in which he concludes that it is practically useless to wind turns within a distance of about one-quarter of the needle-length of the coil centre, and that to increase sensitiveness the needle must be made as short as is consistent with torsion of suspension. Those who describe sensitive galvanometers, and especially instrument makers in cataloguing are urged to present the data.

d = deflexion in mm. with scale at 1 metre from galvanometer.

c = current in amperes producing that deflection.

g = the galvanometer resistance as connected up when d is observed.

t = the time of single swing of the needle when c is measured.

THE Board of Health of New York City has passed a resolution providing that all dealers in milk must secure a license from the Board, and licenses will only be granted to those whose dairies have been properly inspected.

WE have received the first number of *The Technical Journal*, a bi-monthly publication adopted as the official organ of the Alumni Association of the Hebrew Technical Institute. Mr. Max Loewenthal, 248 East 78th St., is the editor and publisher.

The British Medical Journal states that inoculation of the virus of small-pox was practiced in Russia in very early times, the system having probably been introduced into the Caucasus from Greece or Turkey, the Tcherkesses adopting the habit of protecting their women from the disfigurements of natural small-pox. The method used was pricking in the virus elsewhere than on the arm. In China, on the other hand, the practice was, and still is, to some degree at least, to insert moist small-pox crusts in the nostril, even to blowing the virus up the

nostril. Queen Catherine of Russia was inoculated in 1768, and very many followed her example, especially those near the Court; and as early as 1772 government facilities for securing inoculation were given, free operations being inaugurated in St. Petersburg, Kazan, and even Irkutsk, in Siberia.

THE investigations carried on by the geological department in the University of Wisconsin during the autumn quarter were as follows: By C. R. Van Hise: A final revision of Principles of pre-Cambrian North American Geology, a manuscript of about 500 pages of typewritten material, to appear in the 16th Annual Report of the Director of the U. S. Geological Survey; a final revision of a report upon the Marquette iron-bearing district of Michigan, about 1,000 pages of typewritten manuscript and 40 maps, to be published as a monograph with accompanying atlas by the U. S. Geological Survey. By Wm. H. Hobbs: A study of material collected in connection with an investigation of the structural geology of portions of Litchfield county, Conn., and Berkshire county, Mass., to be published in a report of the U. S. Geological Survey. With C. K. Leith, a study of ancient volcanic rocks from areas in the Fox River valley. By J. Morgan Clements: Continuation of an investigation on the pre-Cambrian volcanics of the Michigamme district. By S. Weidman and E. R. Buckley: A study of the geology of the vicinity of Wausau, Wis.

UNIVERSITY AND EDUCATIONAL NEWS.

ACCORDING to the fifth edition of *Minerva* the attendance of students at the beginning of last year at the thirty largest universities in the world was as follows:

1. Berlin	8,652	12. Leipzig	2,957
2. Vienna	6,714	13. Edinburgh	5,924
3. Madrid	5,829	14. Cambridge	2,893
4. Naples	5,040	15. Prag	2,859
5. Moscow	4,118	16. St. Petersburg	2,804
6. Budapest	3,892	17. Michigan	2,772
7. Munich	3,561	18. Kijew	2,417
8. Athens	3,331	19. Pennsylvania	2,400
9. Harvard	3,290	20. Turin	2,355
10. Oxford	3,256	21. Yale	2,350
11. Manchester	3,000	22. Minnesota	2,171

23. Glasgow	2,080	27. Columbia	1,816
24. Rome	1,916	28. California	1,731
25. Barcelona	1,887	29. Cornell	1,686
26. Helsingfors	1,861	30. Halle	1,666

The number of students in the Paris faculties was 11,010. Auditors are included in the number of students, which detracts from the value of the statistics. Thus there were 4,963 auditors at Naples, and only 77 matriculated students. At Berlin there were 4,807 auditors, but the number given above does not include students (2,632) in the Technical School, those (780) in the Agricultural School, nor those (398) in the Veterinary School. The order of the American universities and colleges having more than 1,000 students is: Harvard, Michigan, Pennsylvania, Yale, Minnesota, Columbia, California, Cornell, Chicago, Wisconsin, Nebraska, New York, Toronto, Boston, Wesleyan, Princeton, Stanford, Montreal.

THE south division of Hope College, at Brown University, was badly damaged by fire on the 4th inst. The total loss to the University, and to the students who occupied the building as a dormitory, was about six thousand dollars.

ON February 3d the Trustees of Columbia College adopted the following resolution: "That in all official publications hereafter issued by or under authority of the Trustees, all the departments of instruction and research maintained and managed by this corporation may, for convenience, be designated collectively as 'Columbia University,' and the School of Arts, as the same is now known and described, may hereafter be designated as 'Columbia College,' or 'The College.'" They also resolved that the new site of the University should be dedicated on May 2d, at which time the corner stone of three of the new buildings will be laid. Ex-Mayor Hewitt, class of '42, has been invited to deliver the oration.

Nature states that the Council of the Royal Geographical Society offer in the University of Cambridge for the present academical year a Studentship of £100, to be used in the geographical investigation (physical or historical) of some district approved by the Council. Candidates must be members of the University of not more than eight years' standing from matricula-

tion, who have attended the courses of lectures given in Cambridge by the University lecturer in geography. Applications should be addressed to the Vice-Chancellor not later than March 13, 1896.

DISCUSSION AND CORRESPONDENCE.

THE DECLINATION SYSTEMS OF BOSS AND AUWERS.

THE recent paper by Dr. Chandler on the declination systems of Boss and Auwers has been followed by another paper on the same subject by no less an authority than Prof. Newcomb. This paper appears in the *Astronomical Journal* of February 3d. Prof. Newcomb comes to the same conclusion as Dr. Chandler, namely, that the system of Auwers has now become so erroneous as to be quite unfitted for use as a standard. It is of course well known that Auwers' system is in need of revision; indeed we believe that such a revision is now in progress under the direction of the author himself. We cannot see, however, that Prof. Newcomb's paper throws any new light on the matter. As we pointed out in our notice of Dr. Chandler's paper, it is at present a matter of individual opinion how much weight should be attached to Bradley's observations. The vast majority of astronomers think that they are entitled to some weight in the formation of a system. Yet they receive no weight whatever in Boss' system which Dr. Chandler and Prof. Newcomb think should now be employed in place of Auwers'. Prof. Boss has not made public his opinion as to the weight due to Bradley's observations, so far as we know. That he attached no weight to Bessel's reduction of Bradley appears of course from his work on standard declinations, but whether he would do the same with Auwers' reduction of Bradley we do not know at present.

Coming now to the actual arguments advanced by Prof. Newcomb, we will first state very briefly what they are. Passing over those which appear to be of minor importance, we would call special attention to the results presented in Section III. of Prof. Newcomb's paper. Here are tabulated the corrections to Boss' declinations of twenty stars, divided into two groups of ten each, and each covering about